Application No. 10/721,280 Docket No.: 0171-1042P
Reply to Office Action of March 19, 2007

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A negative electrode material for non-aqueous electrolyte

secondary batteries, wherein comprising:

a negative electrode active material containing a lithium ion-occluding and releasing

material selected from the group consisting of silicon particles having an average particle size of

about 0.01 to 50 µm, silicon oxide particles represented by the general formula SiO<sub>2</sub> wherein 1.0

 $\leq x < 1.6$  and having an average particle size of about 0.01 to 50  $\mu m$ , composite dispersion

particles having an average particle size of about 0.01 to 50 um where metallic silicon

crystallites having an average particle size of about 1 to 500 nm are dispersed in a crystalline or

amorphous silicon dioxide, and mixtures thereof, which has been treated with an organosilicon

base surface treating agent, is surface coated and surface-coated with a conductive coating.

2. (Cancelled)

3. (Original) The negative electrode material of claim 1 wherein said organosilicon base

surface treating agent is at least one member selected from the group consisting of a silane

coupling agent or a (partial) hydrolytic condensate thereof, a silylating agent, and a silicone

resin.

4. (Currently Amended) The A negative electrode material of claim 3 wherein said for

non-acucous electrolyte secondary batteries, comprising;

a negative electrode active material containing a lithium ion-occluding and releasing material which has been treated with an organosilicon base surface treating agent is at least one member selected from the group consisting of a silane coupling agent of the general formula (1) or a (partial) hydrolytic condensate thereof, a silylating agent of the general formula (2), and a silicone resin of the general formula (3).

$$R_{(4-n)}Si(Y)_{n} \tag{1}$$

$$(R_m Si)_L(Y)_p \tag{2}$$

wherein R is a monovalent organic group, Y is a hydrolyzable group or hydroxyl group, n is an integer of 1 to 4, p is an integer of 1 to 3, L is an integer of 2 to 4, and m is an integer of 1 to 3.

$$R^{1}_{sl}(R^{2}O)_{t}SiO_{(4-sper)/2}$$

$$(3)$$

wherein  $R^4$  is hydrogen or a substituted or unsubstituted monovalent hydrocarbon group of 1 to 10 carbon atoms,  $R^2$  is hydrogen or a substituted or unsubstituted monovalent hydrocarbon group of 1 to 6 carbon atoms, q and r each are 0 or a positive number satisfying  $0 \le q \le 2.5$ ,  $0.01 \le r \le 3$ , and  $0.5 \le q + r \le 3$  and surface-coated with a conductive coating.

- 5. (Original) The negative electrode material of claim 1 wherein said conductive coating is a carbon coating.
- 6. (Original) The negative electrode material of claim 5 wherein the amount of carbon coated is 5 to 70% by weight of said negative electrode active material.

- 7. (Withdrawn) A method of preparing a negative electrode material for non-aqueous electrolyte secondary batteries, comprising the step of heat treating a negative electrode active material containing a lithium ion-occluding and releasing material which has been treated with an organosilicon base surface treating agent, in an atmosphere containing an organic material gas or vapor at a temperature in the range of 500 to 1400°C.
- 8. (Withdrawn) The method of claim 7 wherein the organic material gas or vapor is thermally decomposed to form graphite in a non-oxidizing atmosphere at a temperature in the range of 500 to 1400°C.
- 9. (Currently Amended) A lithium ion secondary battery comprising the negative electrode material of claim 1 or 4 as a negative electrode active material.
- 10. (Previously Presented) The negative electrode material of claim 1, wherein said lithium ion-occluding and releasing material is a metallic silicon powder having an average particle size of 3.5 μm and a BET specific surface area of 4 m²/g or a silicon oxide powder SiO<sub>1.02</sub> having an average particle size of 1.1 μm and a BET specific surface area of 10.3 m²/g, and said surface treating agent is vinyltrimethoxysilane, γ-methacryloxypropyl-trimethoxysilane, or hexamethyldisilazane.

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